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ABSTRACT

A research project focused on the impact of different agriculture career awareness programs on minority and disadvantaged high school students. It also studied the effects of client age, sex, geographic location, and ethnicity on program effectiveness. Ninth and eleventh-grade students at eight Missouri high schools comprised study and control groups. The research design chosen was the extended Posttest-Only Control Group design. Two career education programs were developed using existing materials: a traditional program using both written resources and paper and pencil activities within the classroom and a nontraditional program using audiovisual materials, site visits, and interviews. Three units on self, career paths and jobs, and career planning were devised. The major hypothesis was that exposure of minority youth to a broader and more accurate picture of career potentials in agriculture will result in more minority youths seeking the opportunities that exist in agriculture. Results indicated that community size and type affected career choice. A greater number of students in the treatment groups chose agriculture-related careers than non-agriculture careers. The project provided for further analysis of career choice through followup questionnaires throughout students' high school studies, into college studies, and/or two years into the work force. (YLB)

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A Career Awareness Program for Agribusiness:

First Year Results

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A CAREER AWARENESS PROGRAM FOR AGRIBUSINESS:

FIRST YEAR RESULTS

Rising unemployment, the diversification and proliferation of jobs in the work place and the growing specialization of knowledge all combine to create a very difficult environment in which a young person must make career choices. The plethora of information and resources, used indiscriminately, can easily overload a person with information. In an effort to combat this overload, teachers, counselors, and industry have developed guides and programs designed to move the student through the career decision-making process or to simply provide the student with information on career opportunities.

Research points out several facts relevant to the area of career education. The first indicates that career counseling does indeed make a difference (Thomas, 1970). While it does make a difference, the exact nature of that difference has not been clearly delineated. Thus, in practice, we find many different formats. The most popular approach makes available to the students resource materials in written format. However, state-of-the-art programs often focus on visual aids, visits to workers and their work places, as well as actual internship experiences (Mervine, 1932; DHEW, 1975). Some research has supported the notion that an emphasis on concrete non-verbal experience may be the more productive type of program rather than more traditional methods emphasizing verbal communications, especially with lower class delinquent adolescents (Shore, 1966). Research also indicates that self-awareness plays a large part in the effectiveness of any career education program, due to the links between the concreteness of career choice and the development of the self-concept (Dillard, 1976; Myers, 1976; Barrett & Tinsley, 1977).

Studies of the career education programs on minorities and disadvantaged youth have been focused in the areas of health sciences (Wolfe, 1980; Perry, 1976; McCracken, 1973; Fisher, 1982); science and engineering (Mervine, 1982); journalism (Hoglin, 1979); vocational education (Office of Education, 1975; Holmes, 1979); or general career education (Hamadi, 1977; Nicholas, 1978). A few have focused on the rural, "disadvantaged" student (Office of Education, 1975). However, none focus on the area of agribusiness or agriculture-related careers.

PURPOSE OF THE PROGRAM

The purpose of the research is to measure the longitudinal (ten-year) impact of a career education program.

The program focuses in on agribusiness for several reasons: (a) Due to the increasingly important role of business and industry in agriculture, the career opportunities are greater (Coulter, 1979-80); (b) Due to the stereotypes (Crosby, 1977) attached to agriculture, minority and rural youth have a tendency to shy away from this area in choosing their career; (c) The variety of careers encompassed by agriculture is sufficiently diverse so as to provide a broad spectrum of career opportunities to the exploring youth. Thus, we hope to change the student's perception of agribusiness and the related industry as well as increase the number of students choosing careers in this area.

PROGRAM OBJECTIVES

The assumption is being made in this research that "minority youth have a misconception of what agriculture is and consequently a limited image of what

agriculture opportunities exist" (Hartmann, 1980). As such, the objectives of the research project are: (a) to determine the effects of different agriculture career awareness programs on minority and disadvantaged high school students and university freshmen, (b) to determine the effects of client age, sex, geographic location, and ethnicity on the effectiveness of the career awareness programs.

PROGRAM METHODOLOGY

Student and School Sample Description

The 1982-83 school year began the full run of the program. The following schools participated: East High School and Lincoln Academy North, Kansas City, Missouri; Wellston High School, Wellston, Missouri; Martin Luther King Junior High School and East St. Louis High School, East St. Louis, Illinois; Blair Oaks High School, Wardsville, Missouri; Hayti High School, Hayti, Missouri; Caruthersville High School, Caruthersville, Missouri.

The classes were chosen by the principal of the school. Stipulations were that the class(es) chosen must be representative of the school and be primarily composed of ninth and eleventh grade students. Control groups were formed from matching classes (i.e., ninth-grade English classes from another teacher with a similar achievement range were matched with the treatment group of ninth-grade English classes in the same school).

The classes utilized during this year at East High included five ninth-grade English classes and four eleventh-grade English classes. There was a spread of educational attainment from lowest to highest. The classes at Lincoln Academy North were of mixed grade levels (9-12). Five social studies classes

were utilized, along with four classes of science: biology, ecology, and two human science classes.

Martin Luther King Junior High is the feeder school for East St. Louis High School. Since ninth graders are located there, we utilized this school in our sample. Nine ninth-grade classes were utilized, including: English, one; science, three; reading and physical education, one each; shop and home economics, one each. Three classes of eleventh graders were also utilized from the high school, consisting of two physical education courses and one course in greenhouse management.

Wellston High School is located in a suburb of St. Louis. The school is currently 100% black. Study halls of various grade levels participated, three in number.

Blair Oaks High School is located just outside of Jefferson City. Many of its pupils come from farm families in which both parents also work in the city. It is a small, rural school, 100% caucasian. Classes utilized were two ninth-grade social studies classes and one eleventh-grade government class.

Research Design

The goal of the study was to measure the effects of two career education programs over time, using large groups of students. As such, the extended Post-test-Only Control Group design (P.O.C.G.) was chosen. This design has the advantages of minimizing pretreatment inequality when dealing with large groups as well as controlling for testing as main effects and interaction with X without measuring them. In order to measure the long-term impact, high school graduation, the two-year anniversary of entry into a career, and graduation from college were chosen as follow-up points. Thus, we have the extended P.O.C.G.-

Time Series design, as follows:

R	X_0	O_{0a}	O_{0b}	O_{0c}
R	X_1	O_{1a}	O_{1b}	O_{1c}
R	X_2	O_{2a}	O_{2b}	O_{2c}

Where:

X_0 = no treatment group,

X_1 = treatment type 1,

X_2 = treatment type 2,

a, b, c = different time periods

Program Design

With the knowledge that there is an abundance of career education activities already developed, reinventing the wheel seemed a waste of time. Therefore, the two career education programs were developed using existing materials. The uncontrolled variables considered in devising the two treatment programs were as follows: (a) the type of students we would work with; (b) the attitude of the teacher and student towards ourselves and the program; (c) the attitude of the students to career education activities; (d) variability in school/community resources available to the student; and (e) possible variation in carrying out the program due to personality variables. Other considerations in formatting the two programs include: (a) the necessity of transporting materials; (b) computers, or lack thereof, in the schools we work with (not enough available to consider using them); (c) necessary numbers to produce an adequate N in eight to nine years; (d) the amount of time teachers would willingly donate to this type of activity.

Utilizing the above considerations, the two programs were formulated. A "traditional" program utilizing written resources such as the Dictionary

of Occupational Titles, the Occupational Outlook Handbook, MOVview, questionnaires, and paper and pencil activities within the classroom. A "nontraditional" program using audio-visual materials, on-site visits, and interviews as major learning activities formed the second program. Within these two programs three units were devised. The first unit focused on self--how the students see themselves, the values they hold regarding lifestyles and work needs. In the second unit career paths and jobs are looked at in terms of content, training, salaries, needs and values satisfied, outlook and location (in what places/companies is this work found). The student gathers the information that is pertinent to his or her career aspirations, especially as it interfaces with the area of agribusiness. This leads into the third and final unit--Career Planning. The collected information is compared--one career against another--to give the student a visible comparison of his or her alternatives. Then, with a tentative goal in mind, students are aided in laying out a plan of action, including sources for financial aid, training, target employers, and needed experience.

Specific materials were then chosen for relevance to unit and session objectives. Readability and interest level were primary considerations for inclusion. The third requirement was the particular activity's part in achieving our goal. If an activity did not contribute significantly to the advancement of the student's knowledge, it was removed and another put in its place.

Measures

Evaluation of the program's effectiveness is measured at three intervals. The first is an immediate measure of awareness of careers in agriculture and

home economics at the end of the program. The measure of career knowledge is designed as a survey covering careers and information covered in the program, as well as test their awareness of local resources for career information. The second immediate measure is of their stated career goals and the strength of these goals. A measure of self-concept was employed to test the concreteness of career choice at this point in time. Intermediate measures consist of following up on high school activities that involve agriculture and home economics, and enrollment in a two-year or four-year post-secondary educational program. Long-term measures include earning a living in an agriculture or home economics career or in an agribusiness company, or enrollment in a graduate-level program.

Hypothesis

The research is based upon the following assumption: Minority and disadvantaged youth have a misconception of what agriculture is and consequently a limited image of what agriculture opportunities exist (Hartmann, 1980). From this was drawn the major hypothesis:

Exposure of minority youth to a broader and more accurate picture of career potentials in agriculture will result in more minority youths seeking the opportunities that exist in agriculture.²

The major hypothesis was subdivided into four null hypotheses:

H_1 = Exposure to information regarding career options in agriculture and home economics will not change the student's perceptions of these two areas.

H_2 = Exposure to information relating interests to careers in agriculture and home economics will not increase the student's interest in these careers.

H_3 = Exposure to information connecting careers in agriculture and home economics to the student's interests will not increase the numbers of students choosing to pursue careers in these same fields.

H_4 = There is no difference in the impact of the career education programs, regardless of the activities utilized.

Analysis of preliminary information included correlation of control and treatment populations by race, sex, grade level, and location. Following this, comparisons by treatment/control and area were made for numbers of students indicating an interest in an agriculture, agriculture-related, non-agriculture, or no choice of careers.

FIRST YEAR RESULTS

Hypotheses three and four cannot be directly tested until several years pass and students begin choosing jobs and college majors. However, some preliminary indications of career choice are given through the post-testing given at the end of the program. The results are discussed in terms of this information.

Hypotheses one and two can be tested in a tentative way through the student's choice of career at the time of testing. As can be seen from the tables (Tables 1, 2, and 3), the sample populations were statistically similar for the three variables, except in the case of grade level in the Kansas City and Mid-Missouri samples. This has been rectified with the 1983-84 sample.

In comparing the treatment and control groups on the variety of careers selected, one notices the difference between all treatment samples and the

control sample from Kansas City, and the remaining control samples. One possible reason for this difference lies in the fact that our Kansas City sample was from area schools in an urban environment, while the St. Louis sample was drawn primarily from East St. Louis. This area tends to be a rather closed community, in terms of varied occupations visible to students, similar to that which is found in the more rural areas of Mid-Missouri and the Bootheel. Thus, a career education program should have a greater impact on the awareness of different careers than in a more open, more varied community such as Kansas City. It can also be seen that the non-agriculture careers are selected in greater variety than agriculture and related careers in the Mid-Missouri and Bootheel samples, whereas in the other groups the spread is more nearly equal. This seems to indicate that not only size, but the type of community also has an impact on the career choice of a young person.

The career choice of students also provides us with an indication of the impact of the program. In the treatment groups (see Table 5) there is a greater number of students choosing agriculture-related careers than non-agriculture careers. Notice that in all areas the number of undecided students is small, 16% or less, while in the control samples it is 17% or greater. It is interesting to note the difference between the urban and rural populations when comparing students choosing agriculture-related and non-agriculture careers. In the urban areas there has been an increase in the number of students making a career choice, the number of choices made for non-agriculture careers is less than that of those choosing an agriculture-related career by 10%, whereas in the rural areas the difference is approximately half. One possible explanation is that in urban areas there has been a greater exposure to careers in

general, thus the impact is made at the point where the students learn how these careers plug into an agriculture-related industry. With the rural students, on the other hand, the impact comes at the point where they learn where their skills in the area of agriculture are put to use by business and industry.

The first questionnaire was mailed in Fall, 1983. A very small percentage of returns (88) were received. Many were returned due to inadequate addresses. To correct for that, contact was made with the schools to correct addresses. The Spring, 1984 mailing should show corrections for this. Students were asked for their three top career choices as part of the questionnaire. Of those returned, four indicated interest in an agriculture career as their first choice; fifty-two indicated an agriculture-related career as a first choice; and thirty-two indicated an interest in non-agriculture careers. The sample is small, and so conclusions will not be drawn at this time for the results of the first questionnaire.

Short-term measures of the program impact indicate a varied, but positive impact on student interest in agriculture and agriculture-related careers. It will remain to be seen through further follow-up, the length of time that the impact will last.

FUTURE ANALYSIS

Further analysis of the career choice of the sample population will be made through follow-up questionnaires sent to the student throughout their high school studies, into college, and/or two years into the work force. Stability of choice and choice itself will be the focus. In addition, correlation of the self-concept will be analyzed in these same terms. Final testing of all hypotheses will occur when the students have spent two years in the work force or have proceeded into a graduate program of study.

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Footnotes

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Table 1
Comparison of
Treatment and Control Samples by
Grade

	Grade 9		Grade 10		Grade 11		Grade 12		missing
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Kansas City*									
Treatment	178	39.20	36	7.93	204	44.93	36	7.93	6
Control	88	83.81	2	1.91	14	13.33	1	0.95	0
St. Louis									
Treatment	237	79.80	-	-	54	18.18	6	2.02	1
Control	56	73.68	2	2.63	16	21.05	2	2.63	1
Mid-Missouri*									
Treatment	33	55.00	-	-	27	45.00	-	-	0
Control	24	48.98	-	-	24	48.98	1	2.04	0
Bootheel									
Treatment	54	69.23	-	-	24	30.77	-	-	0
Control	12	41.38	-	-	17	56.62	-	-	0

*Difference > .001

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Table 2
Comparison of
Treatment and Control Samples by
Sex

	male		female		missing
	Frequency	Percent	Frequency	Percent	
Kansas City					
Treatment	201	46.96	227	53.04	32
Control	54	51.43	51	48.57	0
St. Louis					
Treatment	142	47.97	154	52.03	2
Control	25	32.90	51	67.11	1
Mid-Missouri					
Treatment	21	35.00	39	65.00	0
Control	27	56.25	21	43.75	1
Bootheal					
Treatment	39	50.00	39	50.00	0
Control	16	55.17	13	44.82	0

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Table 3
Comparison of
Treatment and Control Samples by
Ethnicity

	Black		Mexican-American		White		other		missing
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Kansas City									
Treatment	288	75.39	12	3.13	30	21.00	1	0.26	79
Control	68	66.67	7	6.86	27	26.47	-	-	3
St. Louis									
Treatment	296	99.66	-	-	1	0.34	-	-	1
Control	76	98.70	-	-	1	1.30	-	-	-
Mid-Missouri									
Treatment	-	-	-	-	60	100.00	-	-	-
Control	-	-	-	-	49	100.00	-	-	-
Bootheel									
Treatment	41	59.42	-	-	28	40.58	-	-	9
Control	13	46.43	-	-	15	53.57	-	-	1

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Table 4
Number of Careers Chosen
by Students

	Agriculture	Agriculture-related	Non-agriculture
Kansas City			
Treatment	4	23	27
Control	1	22	19
St. Louis			
Treatment	2	25	27
Control	1	6	6
Mid-Missouri			
Treatment	3	17	20
Control	3	6	11
Bootheel			
Treatment	4	16	16
Control	0	7	11

Table 5
 Number of Students Choosing Careers in,
 Related to or Unrelated to
 Agriculture

	Agriculture	Agriculture-related	Non-agriculture	None
Kansas City				
Treatment	11	76	65	34
Control	2	42	41	33
St. Louis				
Treatment	4	74	64	19
Control	0	9	7	31
Mid-Missouri				
Treatment	5	28	15	0
Control	6	7	15	6
Bootheel				
Treatment	4	32	19	0
Control	0	10	12	5

Table 6

Occupational Areas Selected by Students*

<u>Agriculture</u>	<u>Agriculture-related</u>	<u>Non-agriculture</u>
Agriculture	Accountant	Actress
Agriculture Engineer	Architect	Aeronautical Engineer
Conservationist	Artist	Air Force
Dairy Farmer	Beer Maker	Aircraft Mechanic
Farmer	Biologist	Aircraft Pilot
Florist	Cartoonist	Archaeologist
Forest Ranger	Chef	Army
Gamekeeper	Chemical Engineer	Astronomer
Horse Breeder	Child Care Provider	Baseball Player
Horticulturist	City Planner	Basketball Player
Nursery Worker	Clothing Designer	Beautician
Veterinarian	Club Owner	Bus Driver
	Commercial Artist	Carpenter
	Computer Engineer	Cashier
	Computer Programmer	Choreographer
	Computer Technician	Construction
	Counselor	Cosmetology
	Decorator	Dance Instructor
	Diesel Technician	Dancer
	Draftsman	Dentist
	Economist	Deputy Sheriff
	Editor	Doctor
	Electrical Engineer	Electronics Technician
		Elementary Education
		Fireman
		Football Coach
		Football Player
		Homemaker
		Iron Worker
		Janitor
		Lawyer
		Leadership/Fighting
		Lifeguard
		Medical Records Technician
		Movie Director
		Music Teacher
		Musician
		Naval Officer
		Nuclear Physicist
		Nurse
		Nurses' Aide
		Oil Rig Worker
		Physical Therapist
		Plumber
		Police Officer
		Psychiatrist
		Race Car Driver
		Railroad Engineer
		Repairman
		Rodeo Clown
		Scuba Instructor
		Shipping Clerk
		Singer
		Steel Worker
		Stewardess
		Stock Broker
		Stuntman
		Telephone Repairman
		Tennis Player
		Trade Star
		Trash Collector
		Travel Agent
		Truck Driver
		Undertaker
		Welder
		X-ray Lab Technician

*Based on Coulter's (1980, 1981) listings